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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,063	10/05/2005	Koichiro Oiyama	2005_1432A	6099
513 7590 04/09/2007 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			EXAMINER LEE, GILBERT Y	
			ART UNIT	PAPER NUMBER
			3673	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/552,063

Applicant(s)

OIYAMA ET AL.

Examiner

Gilbert Y. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed 1/4/07 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosokawa et al. (US Pub. No. 2001/0030398 A1) in view of Bertin (US Patent No. 4,167,981)

Regarding claim 7, the Hosokawa et al. reference discloses a lip-type seal (Fig. 1) for sealing an outer periphery of a shaft (32) supported by a predetermined housing (31), said lip-type seal comprising:

an elastic seal ring (5, Para. [0036]) including an annular fitted part (e.g. 5a) and a lip part (13), said annular fitted part to be fitted into a hole (Fig. 1) of said housing, said lip part extending from said fitted part inwardly in a radial direction in the shape of a substantially conical ring (Fig. 1) that is to be brought into contact with the shaft (Fig. 1); and

a support ring 912) including an annular joint part (e.g. part in contact with element 1), and an annular supporting part (e.g. 12a), the annular supporting part

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defining a hole (Fig. 1) through which the shaft is to pass (Fig. 1), extending from a side of said annular joint part to a middle region of said lip part (Fig. 1), and supporting said lip part, from inwardly of said lip part, in the radial direction (Fig. 1),

wherein said lip part is tapered in cross section (Fig. 1) in cross section from an area at which non-contact with said annular supporting part begins toward an end of said lip part (Fig. 1).

However, the Hosokawa et al. reference fails to explicitly disclose a value of $T0/T1$ falling within .3. to .7, with $T1$ being a thickness of said lip part at the area at which non-contact with said annular supporting part begins, and $T0$ being a thickness of said end of said lip part.

The Bertin reference, a lip seal for a shaft, discloses a value of $T0/T1$ being of the order of 1 to 2.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a value of $T0/T1$ falling within .3 to .7 to the Hosokawa et al. reference in view of the teachings of the Bertin reference in order to reduce a pressure drop at the contact ridge (Bertin, Col. 1, Lines 43-48).

Regarding claim 13, the Hosokawa et al. reference, as modified in claim 7, discloses an end of said annular supporting part being bent (Fig. 1) away from said lip part so as to define the area at which non-contact with said annular supporting part begins (Fig. 1).

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Regarding claim 14, the Hosokawa et al. reference, as modified in claim 7, discloses the lip part being 85 degrees to 98 degrees in material hardness according to JIS hardness (Para. [0052]).

3. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosokawa et al. '398 in view of Bertin as applied to claims 7, 13, and 14 above, and further in view of Hosokawa et al. (US Patent No. 6,367,811).

Regarding claim 8, the modified Hosokawa et al. '398 reference discloses the invention substantially as claimed in claim 7.

However, the modified Hosokawa et al. '398 reference fails to explicitly disclose a value $(D1-D0)/D1$ falling within .03 to .15, with D0 being an inner diameter of said end part of said lip part, and D1 being an outer diameter of the shaft.

The Hosokawa et al. '811 reference, a rotation shaft seal, discloses $(D1-D0)/D1$ falling within 7% (Col. 17, Lines 16-26).

It would have been obvious to one of ordinary skill in the art at the time of invention to provide $(D1-D0)/D1$ falling within .03 to .15 to the modified Hosokawa et al. '398 reference in view of the teachings of the of the Hosokawa et al. '811 reference in order to ensure the lip end portion sufficiently contacts the rotation shaft when the lip portion receives pressure and to prevent fluid leaks (Hosokawa et al. '811, Col. 17, Lines 22-26).

Regarding claims 9 and 12, the Hosokawa et al. '398 reference, as modified in claim 8, discloses an end of said annular supporting part being bent (Hosokawa et al.

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'398, Fig. 1) away from said lip part so as to define the area at which non-contact with said annular supporting part begins (Hosokawa et al. '398, Fig. 1).

Regarding claims 10 and 11, the Hosokawa et al. '398 reference, as modified in claim 8, discloses the lip part being 85 degrees to 98 degrees in material hardness according to JIS hardness (Hosokawa et al. '398, Para. [0052]).

Response to Arguments

4. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gilbert Y. Lee whose telephone number is 571-272-5894. The examiner can normally be reached on 8:00 - 4:30, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia L. Engle can be reached on (571)272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GL
March 29, 2007



Patricia Engle
Supervisory Examiner
Tech. Center 3600